

Four Components of Evidence-Based AAC Service Delivery

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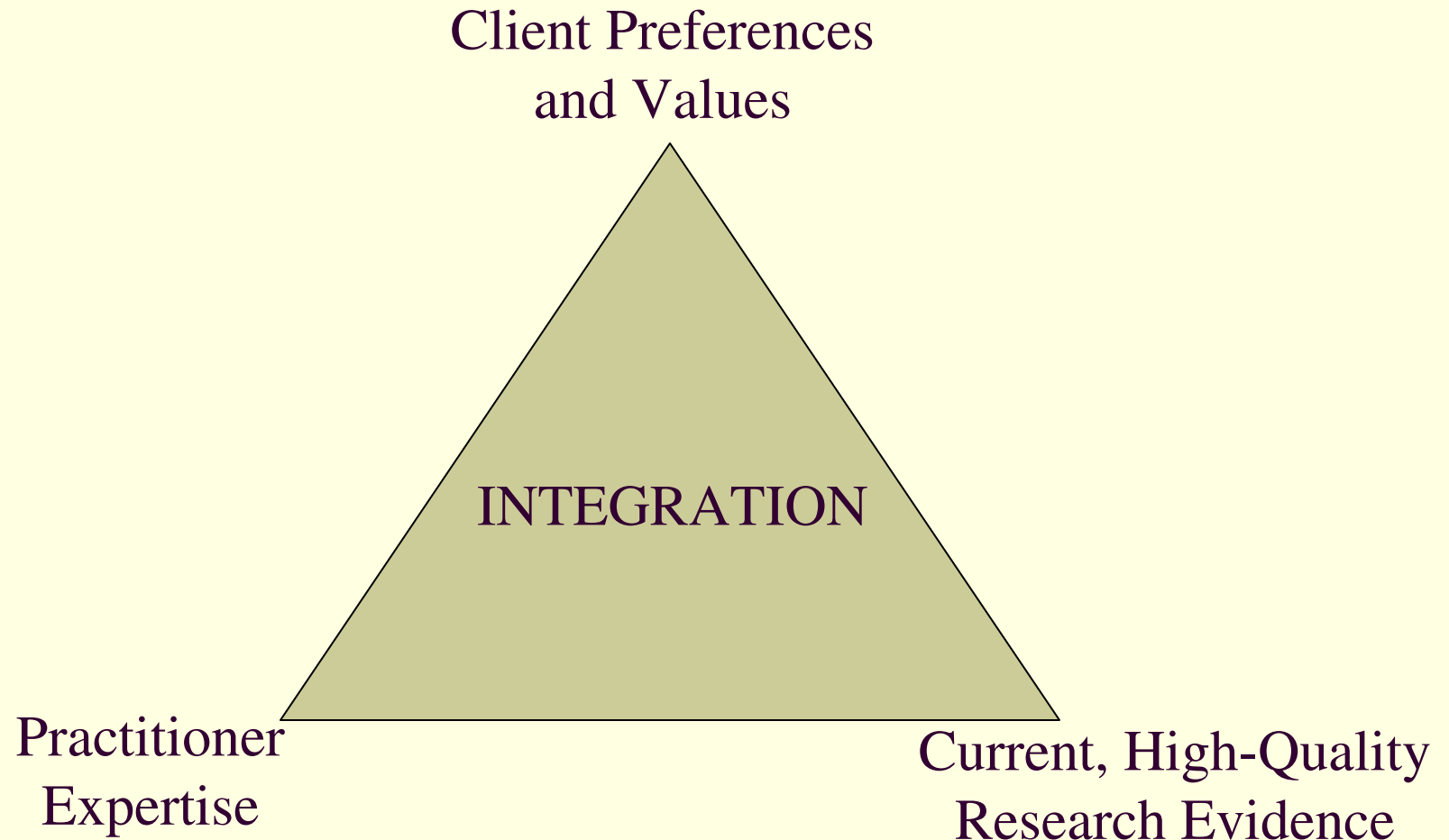
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Evidence-Based Practice

The term *evidence-based practice* refers to an approach in which current, **high-quality research evidence** is integrated with **practitioner expertise** and **client preferences and values** into the process of making clinical decisions.

It is the position of ASHA that we incorporate the principles of EBP (ASHA, 2005).

Evidence-Based Practice Illustrated



Proposed Working Definition: EBP in AAC

“Evidence-based practice is defined as the integration of best and current research evidence with clinical/educational expertise and relevant stakeholder perspectives to facilitate decisions for assessment and intervention that are deemed effective and efficient for a given direct stakeholder.”

(Schlosser & Raghavendra, 2003)

Perceived obstacles to EBP & AAC

- Pre-service training emphasizes clinical theory and methods rather than research methods
- Conducting research is difficult due to low incidence and heterogeneity of the population
- Access to and management of published research and other resources is costly, time consuming and overwhelming

Four Components of Evidence-Based AAC Service Delivery



EBP Suggests that AAC be Transdisciplinary

“AAC is a multidisciplinary field that requires skills that transcend the typical discipline-specific training received by speech-language pathologists, physical therapists, occupational therapists, educators, and other professionals who may serve on an AAC team.... In most cases the service delivery model of choice is the transdisciplinary approach, encouraging extensive collaboration between team members, role release of skills to and from one another, and maximizing each team member's skills and contributions to the team.”

- ASHA, 2002

Team input and decision making is critical to successful outcomes

AAC user is the primary member of the team

Assessment Process

Sensory/Perceptual: Goal is to determine size, type, placement of symbols and identify language input and output options

Access: Goal is to identify optimal seating & positioning and motor technique for access

Linguistic: Goal is to identify AAC techniques & strategies & select types of symbols

adapted from Beukelman & Mirenda, 2005

Perceived obstacles to EBP & Assessment

- Lack of standardized AAC assessment tools
- Few formalized assessment protocols specific to AAC
- Need to modify standardize cognitive, language and literacy tests
- Absence of formal tests often results in unorganized and incomplete recording of what was tested, how it was tested and exact results.
- Few opportunities for learning how to perform quality assessment
- Person centered evaluations difficult at current reimbursement rates

Assessment Considerations

Explore Consumer Expectations

- Know that many with acquired disorders expect that they will communicate as efficiently with a device as with speech
- Ask and observe how the individual and peers look at or participate in a variety of daily activities
- Consider that only 54.1% reported that the assessment took into account all the environments in which equipment would be used (Sack, Simmons & Cress, 2004)

Pre-Assessment Preparation

- Questions at initial contact
 - Preservice Questionnaire
- Information that can be obtained prior to assessment session
 - Preevaluation Questionnaire
- Obtaining previous reports, evaluations, and supplemental information
 - Communication Questionnaire
 - Case History

Multi-Session Assessments

- Assessment processes will ideally involve more than one session
- At the end of each session, attempt to talk with all participants
- Provide a written summary at the conclusion of each session
 - Mechanism to ensure all team members have similar expectations for assessment outcomes
 - Means of sharing information that helps everyone to understand what was done
 - Way to communicate what will happen next
 - Method of recording information for report writing
- Evaluation Consult Summary

Diagnostic Materials

- WATI Assessment Package
 - Wisconsin Assistive Technology Initiative
 - www.wati.org (products)
- GPAT Evaluation Toolkits & Protocols
 - Georgia Project for Assistive Technology
 - www.gpat.org (under Resources, click on AT Evaluation)

Sensory/Perceptual

Goal is to determine size, type, placement of symbols & identify language input & output options

- Vision

- Visual Acuity
- Visual Field
- Oculomotor Functioning
- Light Sensitivity
- Color Perception

- Hearing

- Standard Assessment

Access

Goal is to identify optimal seating, positioning, and motor technique for using AAC system

- Identify appropriate positioning
 - Positioning has a direct impact on motor control, which is necessary for use of all AT
- Identify selection technique
 - Anatomic site: hands, head/voice, feet, arms/elbow, legs/knees, eye gaze
 - Action: Identify functional movement pattern(s) with regards to range, accuracy, consistency, strength, speed

Work with other members of the interdisciplinary team, as necessary

Access

Work with other members of the interdisciplinary team to assure that the access evaluation is person centered

- Assure that access method can be used repeatedly without fatigue, discomfort or embarrassment
- Seek input from client on preferences for input
- Determine that access methods can be used across all environments or if there may need to be multiple means of access

Access

Identifying device features and input system requirement

- Activation site: the minimum size of activation site, possible number of activation sites, spacing of activation sites will be determined by accuracy
- Sensitivity: the amount of pressure or force needed to activate the cell or system
- Selection Methods: direct, scanning, encoding
- Physical access: direct select, head pointing, joystick, Morse code, scanning, eye gaze

Access

Implications for functional use of system

- Mounting
- Portability
- Transferability
- Flexibility
- Ease of setup
- Visibility
- Backup systems
- Independent access
- Access to other stuff
- Other users
- Access to other activities

Assessment Process

Solicit input of user and partners in evaluation process, including issues of access

- Consider device appearance and match with personality of use
- Take care in voice selection (gender, age, regional dialects, cultural diversities)
- From Sack, Simmons & Cress (1994)
 - Only 33.7% of AAC and wheelchair users reported being asked about preference for different features or reluctance to use certain features
 - Only 25.5% felt that the assessors really listened to them or took their comments into account
- From Fried-Oken & Bersani (2000)
 - AAC users are often excluded from decision-making

Linguistic

***Goal is to identify AAC techniques & strategies
& select types of symbols***

- Cognition: Examines how individual perceives world and how might use communication within his understanding
- Language Skills: Examines use of a single word vocabulary to common language structures
- Literacy: Assesses reading, spelling, and writing skills
- Symbol Selection: Examines how an individual can communicate with symbols & possible symbol types

Linguistic

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***Many of these assessments have been performed prior to an
Augmentative Communication Evaluation and results
should be obtained from those evaluations***

***Modification of existing assessment instruments may be
necessary along with the expertise to interpret results***

Example of Test Modification



Peabody Picture Vocabulary Test (PPVT-4) and Expressive Vocabulary Test (EVT-2)

- Co-normed for ages 2-6 to 90+
- Adults with intellectual disabilities included in the normative sample
- EVT has full-color stimulus pictures
- Published by AGS - www.agsnet.com

Linguistic

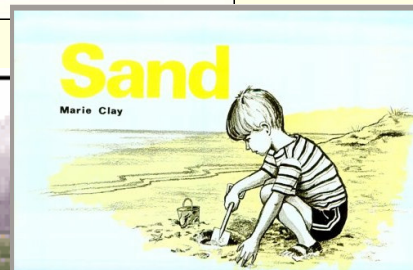
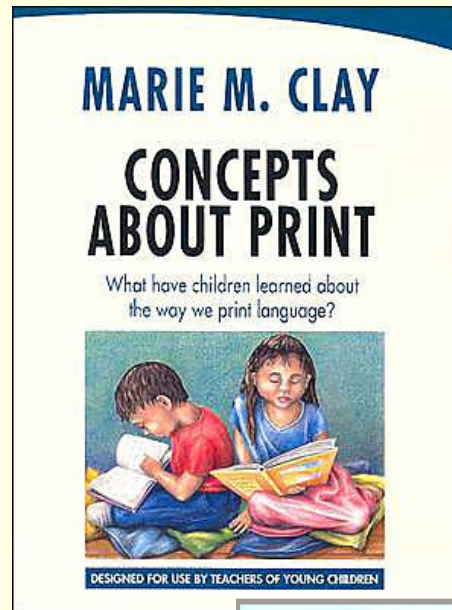
Goal is to identify AAC techniques & strategies & select types of symbols

- Literacy: Assesses reading, spelling, and writing skills
 - Standardized
 - Performance
 - Observations
 - Alternate Assessments

Utilize results from any reading assessment performed by teacher or others that provide insight into literacy skills

However many of those needing AAC have only emergent literacy skills that have not been accessed

Assessment of Emergent Readers



Concepts About Print by Marie Clay

Determine how well the individual understands how print is used:

Book orientation

Where to start

Which way to read

Front and back of book

Beginning and ending of book

Title

Graphics have meaning

Words (not graphics) is way to read book

Assessment of Emergent Readers

- Concepts about Print Assessment (demonstration):

<http://teams.lacoe.edu/documentation/classrooms/patti/k-1/teacher/assessment/print/conceptsq.html>

- Concepts of Print Assessment:

<http://wilearns.state.wi.us/apps/default.asp?cid=92>

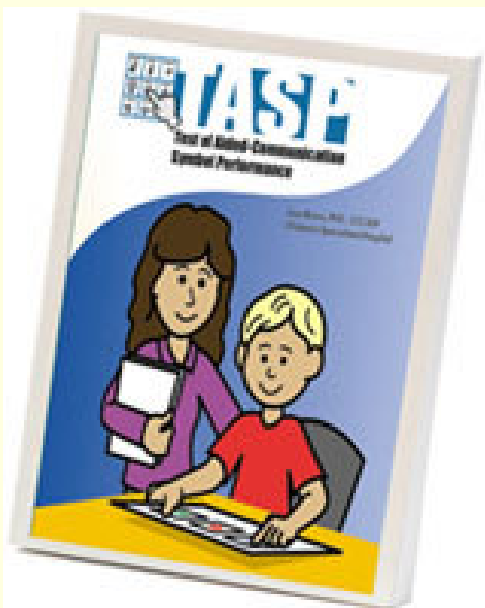
Linguistic

Goal is to identify AAC techniques & strategies & select types of symbols

- Symbol Selection: Examines how an individual can communicate with symbols & possible symbol types

There are few formal assessments to identify what symbol set might be used or how a person perceives symbols or how the individual might utilize symbols for communication

Test of Aided-Communication Symbol Performance (TASP)



- Written by June Bruno, available from Mayer-Johnson
- A tool for the assessment of Mayer-Johnson symbol-based communication skills
- Includes subtests on symbol size and number, grammatical encoding, categorization and syntactic performance
- Results may help determine AAC intervention strategies and goals
- Provides starting point for designing communication boards or selecting a page for an AAC device

Symbol Types

- Objects
- Texture cues or symbols
- Cut Out Photographs, Pictures, and Symbols
- Photographs
- Line Drawings (Color)
- Line Drawings (Black & White)
- Realistic (Color)
- Realistic (Black & White)
- Visual Scenes
- Alphabet/Spelling

Symbol Sets

- Picture Communication Symbols (PCS) Mayer Johnson
- Dynasyms
- Gus Overboard
- Photos (Picture This, Photo Sentence Maker)
- Picture Master Language Software (PMLS)
- Rebus
- Sclera
- Slater
- Unity icons based on Minspeak symbols
- Tech/Syms
- Imagine
- Go Talk
- Blissymbols
- BlinkTwice
- Pictograms Symbols
- Icons from Enabling Devices
- High Contrast Icons
- Lingraphica
- Object-Symbol Resource, LLC
- Talking My Way

Picture Master Language Software





Symbol Diagnostic Materials

Children, adolescents and/or adults may need items that are both juvenile and adult-like, if accurate estimates of abilities are to be determined.



A Diagnostic Toolkit

20 Fundamental Words for Assessment

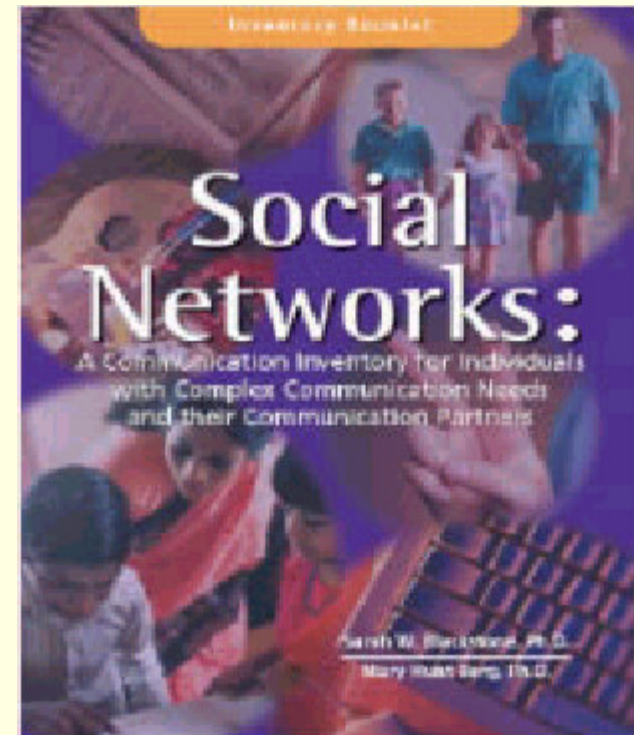
Emerging Vocabulary or Vocabulary for ADLs

- Eat
- Drink
- Bathroom
- Music
- Dog
- Play (ball)
- Read (book)
- Playdough
- Bubbles
- Jewelry
- Money
- Help
- All done
- Want
- Mine
- More
- Stop
- Go
- Work
- Television

Based on research into early vocabulary development (Banajee, et al., 2003), the importance of requesting as an early communicative behavior, and the needs of our work facility.

Social Networks

- Written by Sarah Blackstone and Mary Hunt-Berg, available from Attainment
- Enables collection of information from individuals, their families, and involved practitioners, about their communication partners and current modes of expression to assist in guiding and refining intervention
- Based on principles of functional goal setting and person centered planning



Assessment Process

Arrange for and/or conduct device trials or loaner periods

- Good start for identifying vocabulary needs
- Person(s) performing or assisting with trials must be familiar with the device to assure an effective examination period
- Findings from Brown & Johnson (2004) stated that two of six subjects indicated that being able to try out a device before buying was a factor leading to successful use of AAC

Perceived obstacles to EBP & Treatment

- Pre-service training and clinical experience is typically limited
- Misconception that AAC is only about technology
- Diverse literature is often difficult to obtain
- Technology is constantly changing and maintaining current knowledge is difficult

Treatment

System selection & implementation

- Assessment results and input from the user and communication partners should be used to match cognitive and physical resources with demands of system
- Consider appearance of device/system and match with the preferences and personality of the user
 - Some people capable of using high tech devices prefer the shared interaction that static displays require or support

Treatment

Topic and Vocabulary Selection

- Consult with the AAC user, family, friends, teachers, etc., before selecting messages to be represented by single meaning pictures, in subjects for pages/levels, or as fringe vocabulary; various procedures are described by Beukelman & Mirenda (2005), and Fallon et al. (2001) provide a *Vocabulary Selection Questionnaire*
- Provide vocabulary that allows for a wide variety of communicative functions (e.g., initiating, requesting, rejecting, commenting, directing) and strategies for conversational repairs; extensive, current research evidence supports providing access to an array of functions with multimodal AAC systems
 - Consider how to include opportunities to share private comments, feelings or information (Smith, 2005)

Treatment

Message Organization

- Consider single meaning pictures, semantic compaction, or orthographic systems, and select what is understood and preferred by AAC user
 - If working on more complex message representation/organization, consider how to meet immediate communication needs
- Envision how the user conceptualizes the world to assure that the device supports communication efficiency
- Conversationally powerful AAC systems are often multimodal or combine methods for accessing communication

Treatment

Set Goals

- Keep the need for future system expansion in mind, even in introductory stages of AAC use (e.g., place initial symbols in the locations they will ultimately occupy on a large static display)
- Provide normal language learning opportunities for those with complex developmental communication needs so that each AAC user acquires personal maximum language competence (Beukelman & Mirenda, 2005; VanTatenhove, 2005)
- Replace socially unacceptable communicative behaviors and with highly effective, acceptable ones

Treatment

Work towards functional use of device

- Good quality initial training is critical to long range outcomes
- Provide training in functional, contextual use of device, and focusing on language development /rehabilitation in addition to instruction in technology
 - Provide structured practice through role playing or games and other routines
- Provide prompt and appropriate response to or reinforcement of system use, especially during introduction and initial training (Johnston et al., 2004)
- As appropriate, include rate enhancement techniques to improve efficiency, effectiveness, and social acceptance of AAC use

Treatment

Provide models for AAC system use

- Daily demonstration of AAC techniques should be provided by therapist and communication partners through Aided Language Stimulation/Modeling (Goosens et al., 1992; Drager et al., 2006) or System for Augmenting Language (SAL; Ronski & Sevcik, 2006).
 - Requires more than cursory familiarity with device features and capabilities on part of professional and communication partners
- Use and acceptance may be enhanced by providing opportunities to interact with more proficient AAC users

Treatment

Self-training and programming

- To the extent that the system allows and the consumer is willing and able, provide guidance for their exploration and modification of the communication system
- Before “locking” a system to prevent user access to programming features, ask why
 - If they are making changes to what the practitioner prepared, consider that they may not have had adequate input during implementation

Treatment

Once an effective and efficient system is found, avoid “flip-flopping”

- Consistency is essential with complex communication needs/low cognition
- Especially difficult with staff turnover or communication partners with limited time, training or patience to deal with the AAC system
- Changes made to improve the system's fit and to prevent device abandonment or discontinuance are not considered “flip-flopping”

Treatment

Monitor Outcomes of Interventions

(Schlosser, 2003)

- Without adequate documentation, practitioners cannot know if their treatment is responsible for changes in skills
- Intervention parameters must be clearly defined to allow consistent implementation and observation over time
- Design data sheets for monitoring progress
- Be aware of the risk of “practitioner bias” - strive for objectivity

Treatment

Socialization

- People with developmental disabilities
 - May have limited exposure or opportunity to engage in social interaction, and may need to be explicitly taught how to socialize
 - Consider use of commercially available programs (e.g., Social Networks, Social Skills Stories, Social Skills at Work, Social Skills on the Job, Social Standards at School, Social Skill Builders)
- People with acquired disabilities
 - Establish the desire for, tolerance of, and expectations for social interaction
 - Assist in identifying communication that permits regaining or maintaining levels of social closeness that are important to the AAC user

Perceived obstacles to EBP & Communication Partner Training

- Misconception that role of SLP is only about assessment and therapy
- False impression that the most complex and/or costliest technology is the best technology (Beukelman & Mirenda, 2005)
- Limited opportunities for preservice training or professional development on how to be an effective trainer
- Limited resources or information in how to train communication partners
- Lack of funding for reimbursement of time spent in training communication partners

Communication partners are often

Stiflers



***and inhibit rather than support
communication.***

Communication Partner Training

Minimize these detrimental communication behaviors

- Not waiting for responses from the AAC user
- Using far too much verbal garbage
- Confusing AAC users with tags and fill-ins, such as “Tell me what you want, can you do that?” or “Let me think now, what are we doing next?”
- Not recognizing communicative attempts by the AAC user (continue as if nothing has occurred)
- Not including AAC user in conversation

Communication Partner Training

Maximize these communication behaviors

- Structuring and supporting situations that provide opportunities for communication
- Providing opportunities for AAC users to interact with their peers
- Attempting to develop communication systems that support the various functions of communication
- Soliciting and utilizing input in device configuration and use
- Providing opportunities for interacting with peers
- Assuring the system supports accomplishments and participation in activities that are important to the user
- Planning for future situations, circumstances and needs

Communication Partner Training

Providing training

- Numerous studies support provision of communication partner training
- Provide orientation to AAC, the device, and use of the device
- Model functional interactions
- Instruct in use of specific strategies: creation of communication opportunities, expectant pausing, recognition and response to communicative attempts, asking open-ended questions, etc.

Communication Partner Training

Providing training

- Act as a mentor to family, friends, or other professions/ paraprofessionals
- Provide sensitivity training for peers, families, and staff
 - What it's like to have a disability
 - What it's like to use a device
 - How to be an effective communication partner
- Identify conferences, workshops, or vendor inservices that are easily accessible to partners and will be of benefit to them

Communication Partner Training

The Strategy Instruction Model (Kent-Walsh & McNaughton, 2005)

- Stage 1: Pretest and Commitment to Instructional Program
 - Obtain baseline of spontaneous use of strategies
 - Establish that partner is committed and motivated
- Stage 2: Strategy Description
 - Highlight the positive effects of implementing strategies
- Stage 3: Strategy Demonstration
 - Think aloud and model self-cueing and problem solving
- Stage 4: Verbal Practice of Strategy Steps
 - Ask partners to describe each step and explain importance

Communication Partner Training

The Strategy Instruction Model (Kent-Walsh & McNaughton, 2005)

- State 5: Controlled Practice and Feedback
 - Gradually fade cueing, ensuring success
- State 6: Advanced Practice and Feedback
 - Practice in natural environment with gradually faded cueing
- State 7: Posttest and Commitment to Long-Term Strategy Use
 - Highlight success and the positive impact of strategy use
- State 8: Generalization of Targeted Strategy Use
 - Use of strategies across environments is not automatic

Perceived obstacles to EBP & Environmental Supports

- Misconception that AAC is only about technology and therapy
- Limited preservice training and knowledge about AAC use, often results in clinicians not recognizing the value of visualizing the AAC user in all potential environments
- Inadequate information, resources and research on functional use of AAC in various environments
- Funding does not support community involvement by the interventionists (evaluations in various environments, treatment in contextual situations)

Environmental Supports

Preferences for AAC

- Identify types of activities in which the individual likes/wants to participate (Portability, size, durability, visibility, volume adjustment)
- Determine what the person enjoys doing and assure that there are messages or overlays to support those activities
- Explore access to computers, environmental control, photography, internet, phones and/or text messaging if desired

Environmental Supports

AAC in the Physical Environment.

- Accommodate or modify physical environments as necessary to support use of the communication device
- Assure that device can be moved and readily used in a variety of places in daily environment (bed, dining table, recliner, car, etc.)
- Identify any types of physical demands on the system (durability, life of battery)

Environmental Supports

AAC in the Daily Routine

- Work with communication partners and user to identify all situations
- Determine what needs to be communicated and assure that the individual has the means to do so (*Vocabulary Selection Questionnaire* by Fallon et al.)
- Assess routine situations to identify and provide scripts in predictable situation
- Assure that there are messages that can reflect the user's feelings about daily events
- If user is reluctant to employ device in all situations, identify at least one in which individual will participate and utilize that setting to gain proficiency (Smith, 2005)

Environmental Supports

Maximizing Self Determination and Independence through AAC

- Encourage individual's desire and ability to program or reconfigure own device
- Promote interactive learning and communication through group activities

Thank you for your interest in 4 Components of EBP AAC Services

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